

# Geography of population flow according to the Migrants' Educational level<sup>1</sup>

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## Productive restructuring and population dynamics

WHEN THE STATE of São Paulo began to lose relative share of the country's industrial production at the beginning of the 1970s, various writers began to debate the nature, intensity and perspectives of decentralized economic and interurban activity. For Azzoni (1986), there would be a decentralized interurban area within a limited range, an agglomerative field with a radius of approximately 150 kilometers, which would yield an outline the size of the city of São Paulo and its metropolitan region.

Diniz (1993) showed a series of factors that contributed to geographical decentralization of production, favoring "polygonal development," whose vertices encompass an area much larger than the State of São Paulo. This polygon could be defined by connecting the cities of Belo Horizonte, Uberlândia, Londrina, Florianópolis, Porto Alegre, Belo Horizonte. Among other decentralizing factors, the important points would be: the lack of a formal economy in the metropolitan area of São Paulo, combined with the surging of informal, agglomerating economies in other urban centers and regions; the role of the economical policy or the role of the State; the search for natural resources in new regions; great concentration of social and spatial income distribution; and unification of the market by means of the transport and communications infrastructure.

In this way, the national economic growth in the polygon would be defined: the combined effect of the changes in the economies of agglomeration; the integration of the national market; the availability of natural resources; the conflict between the state and federal governments over regional development; regional inequality in terms of spending for studies and the market for professional work and income (ibid).

Also worthy of note is Pacheco's interpretation (1998), in which there would be multiple tendencies in relation to the regional dynamic, according to territorial size, economic characteristics and the capacity for competition of

each region. For the author, there is no macro-spatial reconcentration process taking place. On the contrary, from the beginning of the 1980s through the middle of the 1990s, the period covered by the book cited:

the process of economic decentralization continued to occur in the country, determined by the dislocation of the agricultural and mineral boundaries, by productive integration of the national market, by the relatively decentralized profile of the Brazilian urban system, by the rise of agglomerative economy and environmental pressures in the most intensely industrialized areas, by governmental policies and by the investment of the state's productive sector, by the differentiated impacts of the economic crisis, by the exporter's guidance, as well as by the microeconomic adjustment of new forms of organization for a large company. (ibid, p.267)

According to the author, the new combination of challenges, expressed in productive restructuring, demonstrates the dilemma of the country's entry into the globalized world. Foremost of these challenges would be reinforcement of the regional inequalities, imposing greater fragmentation of the national space.

*Regionalization of economic activities and their interfaces with migratory flow*

Independent of the interpretation of the process of spatial (de)centralization of productive activities, some factors can be highlighted as characteristics of the pattern of industrial growth up to the 1970s, in other words, expansion occurred due to basic industries linking with available natural resources, and durable consumption. In turn, later technological changes influenced sectors sustained by science and technology, with little demand for natural resources (Diniz, 1993). As Diniz remembers (1993), the new locational requirements were based on the teaching and research centers, associated with an educational and cultural base, in the professional work market, in geographically integrated industrial relations, in ease of access to markets, in the climate of business and in the concentration of research resources, among others. In sum, these are characteristics of large urban centers, at the top of the hierarchy of the network of cities.

Thus, it would be expected that the seasonal break that separates economic activities of lesser and greater technological content will also have its spatial counterpart in recent times, as we've already seen that new locational requirements are highly concentrated in some specific localities.

It is known that large transformations of the productive structure will have a repercussion on the organization of Brazilian space. These changes inevitably raise the necessity of reconsidering national economic geography itself, which was done in some recent studies, such as one completed at Cedeplar/UFMG (Lemos et al., 2000). Taking as its base the micro-regions of IBGE, twelve macro-poles were established, from which eleven areas of

polarization were identified, as well as their respective areas of influence. As its own authors pointed out, this force of a new regionalization is an addition to other works of the 1990s, such as Lemos (1991), for whom the above cited regionalization was taken as a point of departure, the studies about the urban hierarchy of IBGE; and the analyses of the urban network elaborated by IPEA/IBGE/NESUR (1999).

It is worth emphasizing some specific points highlighted in the work of Lemos et al. (2000), to the extent that it points up interesting questions about the delineation of the objectives and the approach undertaken in the subsequent sections:

- the central area, originally considered by Cristaller (1966) in 1933, delineates a market area marked by a strong intensity of flow of exchanges within a circumscribed geographic area as defined by Lösch (1954),.
- North (1955) advanced the definition of region by incorporating the dimension of the regional exporter base, overcoming the idea of a closed economy underlying the original definition of the central place.
- the market area tends to be polarized by the urban center of greatest population and intensity in offering of services while the theory of the exporter base establishes the nexus of exchange in the inter-regional orbit.
- “in order to acquire a specific weight, this denser urban space tends to constitute itself as one collective center of consumption, which *tends to attract a flow of people* or a flow of transactions ” (Lemos et al., 2000, our italics).
- “this flow of people in search of non-exportable specialized activities is derived from places of lesser urban density, which constitute areas of influence or spillover from the central place.” (Lemos et al., 2000).

In fact, analyzing the population flow from the periods 1986-1991 and 1995-2000, recent work by Rigotti & Vasconcellos (2005) shows a very detailed spatial pattern in which the mesoregions which contain metropolitan regions or capitals of units of the federation are those that attract population of the immediate surrounding area and, depending on the their weight in the urban hierarchy of the country, from more distant and less populated areas. However they are also the largest areas of origin of the migrants, probably including the regions they return to. After their theoretical considerations, Lemos et al. (2000, p. 8) argue thusly:

In the face of these theoretical propositions, presented in the above summary, we pose the following problem: once the polarization is characterized by the specific dynamic of a sector, the third sector, which is the area of influence of a pole in relation to a flow of exchanges (the dislocation of commodities and of people in search of services), how is it possible to determine a hierarchical

profile of economic regions within the combined data of available statistical information? On the other hand, how can this conjunction of information be considered - the flow of exchanges that follows interregional exportation - in a manner that can guarantee the open economic nature of the regions?

The solution found was the use of the Gravitational Model proposed by Isard (1960), with the objective of defining a sketch of the interactive area of a pole approximately the area of the market.

### *Recent spatial redistribution of the Brazilian population*

Noted in the previously selected citations, above all, is the importance of information about flow, whether by people, means of transport or merchandise. But, as a study cautions that Lemos et al. (2000) cite by IPEA/IBGE/NESUR (1999), there is no reliable data about the flow of merchandise and services in Brazil. Therefore, the most that the analyses can follow is a good *simulation* of the interaction between the poles and their areas of influence, or between the intersections of the networks in question – urban, transportation system, etc.

In whatever way, there is a link between the regional economic development and the demographic growth of the country. Describing the preliminary results of the demographic Census of 2000 Rigotti & Abreu (2002) showed that the South and Center-West regions were the only ones in which the demographic growth did not diminish, when comparing the 1980 with the 1990s. In the first region, the dynamism owed primarily to the performance of Paraná, while the growth of the second was only less than the relatively greater growth of the North region.

Some changes in relation to Brazilian urban dynamics were also identified. Nearly one fourth of the population live in capitals, but this proportion has been practically unchanged in the last two decades. Comparing the data from the demographic censuses of 1991 and 2000, the authors noted that the municipalities with less than twenty thousand inhabitants showed a reduction of population (in both absolute and relative numbers). It is worth emphasizing that this is as much true for municipalities with less than twenty thousand inhabitants as it is for those with more than a million people maintaining the same participation among the total Brazilian population in 2000; i.e., each of these categories encompass almost 20% of the residents of the country, while in the larger size municipalities an increase of population occurred between the two dates.

The municipalities of intermediate demographic size were those that presented the most expressive rhythm of population growth. The major highlight continued to be the municipalities with residents numbering between one hundred thousand and five hundred thousand. In these there was an increase of more than nine million residents between 1991 and 2000.

Rigotti & Abreu (2002) inferred that the medium size cities went on to have a prominent role in the 1990s, which also corresponds to some conclusions from the body of work organized by Andrade & Serra (2001). However, the charting of these results also showed that:

there are not many urban centers of this category with an accelerated rhythm of population growth but, as everything indicates, the end of the century went on to have reinforced the relative spatial deconcentration of the Brazilian population. (Rigotti & Abreu, 2002, p.6)

Keeping in view the ideas and the results of the work summarized here, it is pertinent to ask to what extent the various regional approaches are inter-related with the direction and intensity of the population flow of Brazil. Hypothetically, it was expected that some overlapping between the economic regions and the spaces defined by the demographic flow would show up, although with the probability that there would be identifiable differences in their outlines, especially if the flows were distinguished according to schooling or types of occupation, for example.

In reality, if there is a restricted group of regions which stands out due to their new locational requirements as commented by Diniz (1993), it will be expected to receive the elite of the country's manual labor, i.e., those with the highest level of schooling. Besides this, owing precisely to the presence of university and research centers in these same regions, it could also be expected that the most qualified manual labor would be supplied by them.

A vast part of Brazil, however, is still characterized by low demographic density locations, where economic activities that are prevalent are detached from the technological innovations that add great value to goods produced. According to the 2000 Census more than one third of the Brazilian population live in municipalities with less than fifty thousand, and practically half of the municipalities with up to one hundred thousand inhabitants. While the base of natural resources continues to sustain a large part of the economy, less qualified manual labor will probably be demanded in specific locations of a broad extent of the Brazilian territory, in spite of the growing role performed by the agricultural-business producers of *commodities* for export that also need workers that are relatively more qualified.

The social nets underlying the process of becoming cities can equally play an important role as mechanisms of population absorption and/or repulsion. The former enormous demographic flow, the era which had great demand for work that did not require high levels of schooling in the large cities – especially Rio de Janeiro and São Paulo – and, also, the offer of land in the agricultural and mineral frontier areas suggests that there is possible inertia in relation to the perception and decision-making on the part of migrants that would induce them to remain in these areas. However, as some of these studies observe concerning return migration (Ribeiro & Carvalho, 1998), the return

to original regions is certainly occurring. Therefore, the regional interaction documented by the migratory movements should reproduce this reality. As an historical phenomenon, the return of the least qualified – from metropolitan areas or from old frontiers to the areas of origin in the interior of the country – should have performed a significant role in the more up-to-date migratory process, and will be verified further on.

### **Methodological Clarifications**

In order to identify the spatial patterns of the migratory flow between mesoregions, two extreme levels of population qualification were selected from the population involved in population movements in two periods (1986-1991 and 1995-2000): people over 25 years of age, with fifteen or more years of study; and another group of migrants with up to four years of study, in the same age range. They were therefore considered from a population within a productive age from which the great majority had already finished their cycle of school life. In other words, the first collection of people is those apt to provide more qualified labor for areas with the latest requirements for the location, while the second represents the supply of workers for areas with activities requiring low technological content. Given this choice, the intention is to identify where the two extreme types of flow are directed and where they continue.<sup>2</sup>

For each period analyzed, a chart will represent the principal origin of each identified migratory network following common destinations to that migratory net; another chart will delimit the migratory networks containing the principal destination of each of them, according to the most important origins. From the way in which they were elaborated, the migratory nets are mutually exclusive, i.e. the exchange of population between them was not represented – an arbitrary decision for the purpose of synthesizing the principal spatial patterns.

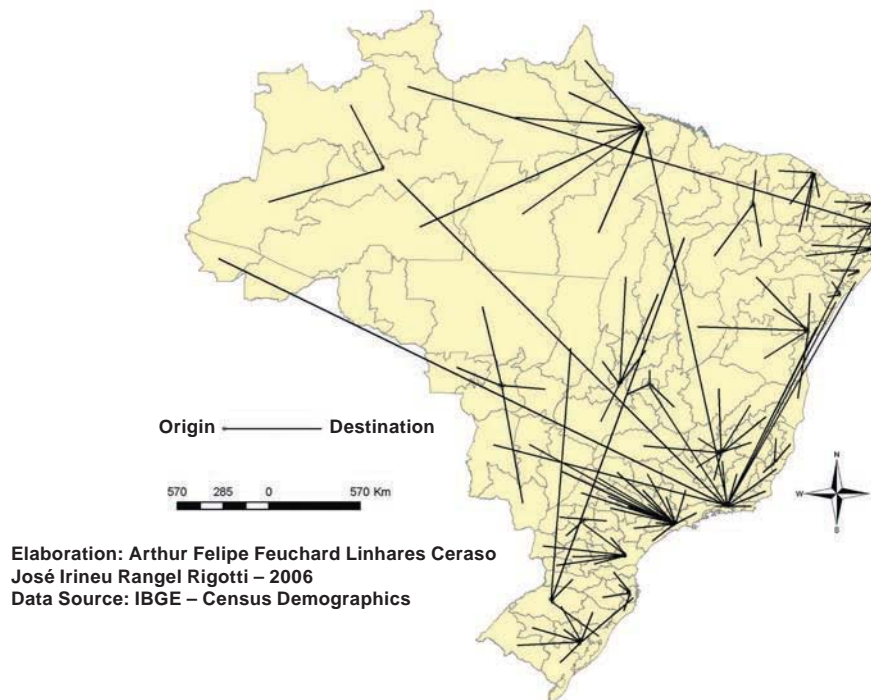
### **The most educated migratory networks**

#### ***First period***

In the first period, the flows are directed basically to the closest areas, with relevant exceptions. (Figure 1). The Metropolitan Region of Rio de Janeiro sent qualified emigrants to the north and north-east of the country; the metropolitan region of Belém also sent emigrants to other areas far from the North – in spite of the great distances, it should be kept in mind the weak density of the urban network of this region, i.e., the originating centers of qualified people are rare; the City of São Paulo sent its emigrants to regions of a lesser distance away, predominantly, but reached some mesoregions relatively far in the Center-West. This shows a great capacity of the interior of the state itself to attract a more educated population.

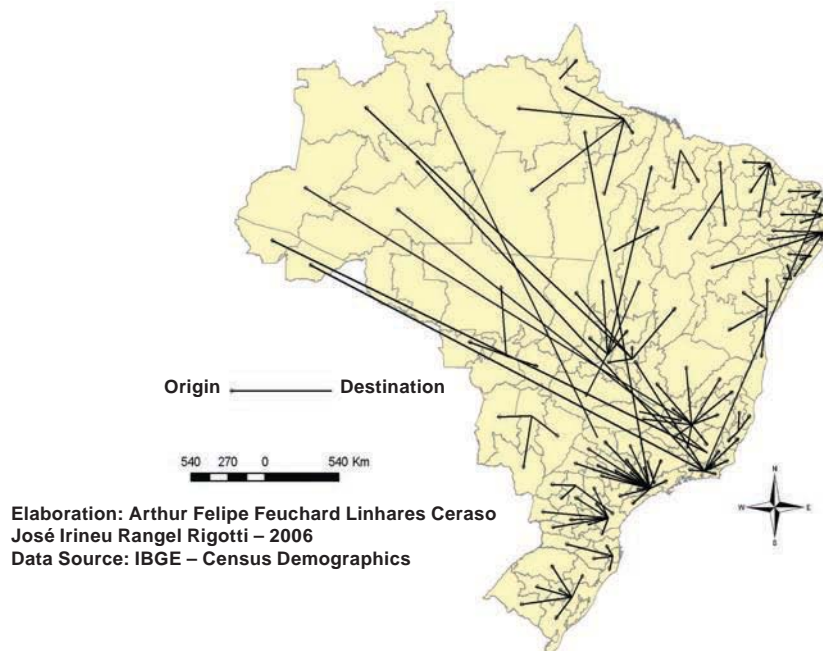


**Brazil: Principal Origins of the Migratory Flow  
Population with 15 years or more of study  
1986-1991**



**Figure 1**

**Brazil: Principal Destinations of the Migratory Flow  
Population with 15 years or more of study  
1986-1991**



**Figure 2**

The Northwest of Rio Grande do Sul (one of the two mesoregions that is without a capital) also sent migrants to the Center-West, following a tradition of migratory exchanges between these two regions. The region that contains the capital of Paraíba is the originating area for a remote area of Roraima. Paraíba is the other state that has a region, that being Campina Grande (the second most populated municipality, with more than 350 thousand people), in which the capital is not considered.

In relation to the migrant's preferred destinations, the mesoregions are generally connected to the closest areas, but the two largest cities, São Paulo and Rio de Janeiro (principally), showed connections with the North (Figure 2). Also presenting ties with the Northeast, this area of Rio de Janeiro plays an important role as a national destination for the more educated from the North and the Northeast, testifying to the relatively well-known phenomenon of two-way exchanges, once they also appear as the origin for these areas. However, it is worth noting that São Paulo does not serve as the most relevant destination for more educated people from the Northeast.

Two of the four areas without capitals were in the state of Minas Gerais in the period between 1986-1991. One of the most dynamic areas of the state, the Triângulo Mineiro, received qualified population from the Metropolitan Region of Belo Horizonte, showing the power of attraction of this regional pole. The other was the Zona da Mata, and, in spite of being next to Juiz de Fora, the fourth largest city of Minas Gerais, it is a stagnating region. In the same manner as the regions of the Northeast, the Zona da Mata is probably another example of a region with returning qualified migrants, once its immigrants come from the North of the country, a place that received a generation of emigrants from Minas Gerais for decades. Besides this, during the 1980s, more than 70% of the total of immigrants either were returnees or accompanied other people returning to Minas Gerais (Ribeiro & Carvalho, 1998).

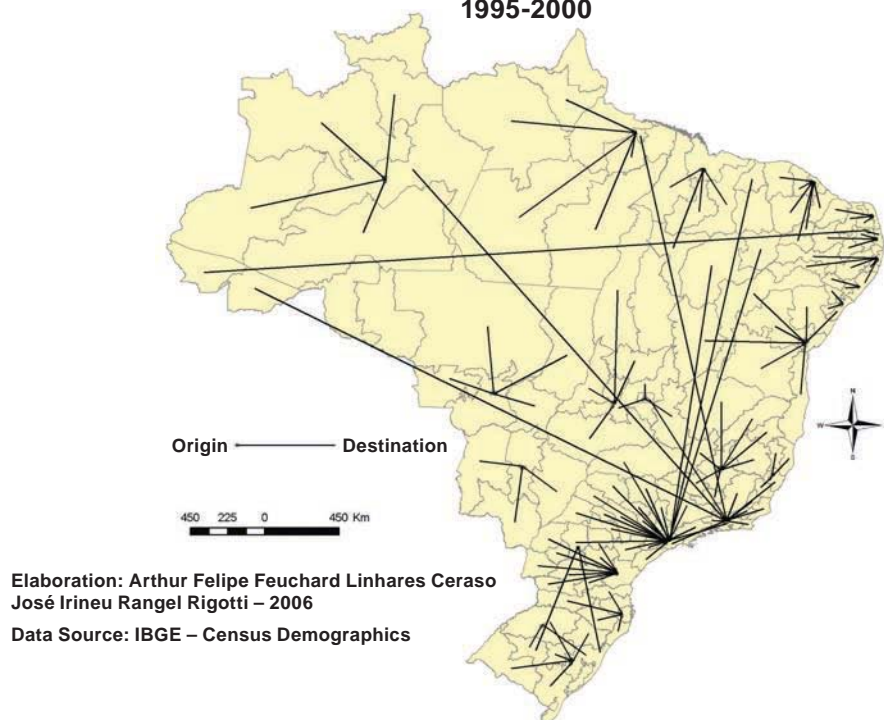
### *Second Period*

In the second half of the 1990s, the principal origins disseminated their emigrants, most of the time, to places closer-by (Figure 3).

Only one mesoregion lacked a metropolitan region or state capital. The spatial structure of migration had few but relevant alterations. One of the differences was the inclusion of the mesoregion that includes the capital of Mato Grosso and the exchange of the region of the capital of Piauí by the region of the capital of Maranhão. Again, Rio de Janeiro's metropolitan region sent emigrants to destinations situated in the North, but during this period did not send people to the Northeast. The Metropolitan Region of São Paulo is now the one that distributes people to the distant areas in the Northeast, but, at this time, to central rather than coastal areas as was the case of Rio de Janeiro in the preceding period. This fact suggests that the return migration to the interior of the Northeast might be taking place.

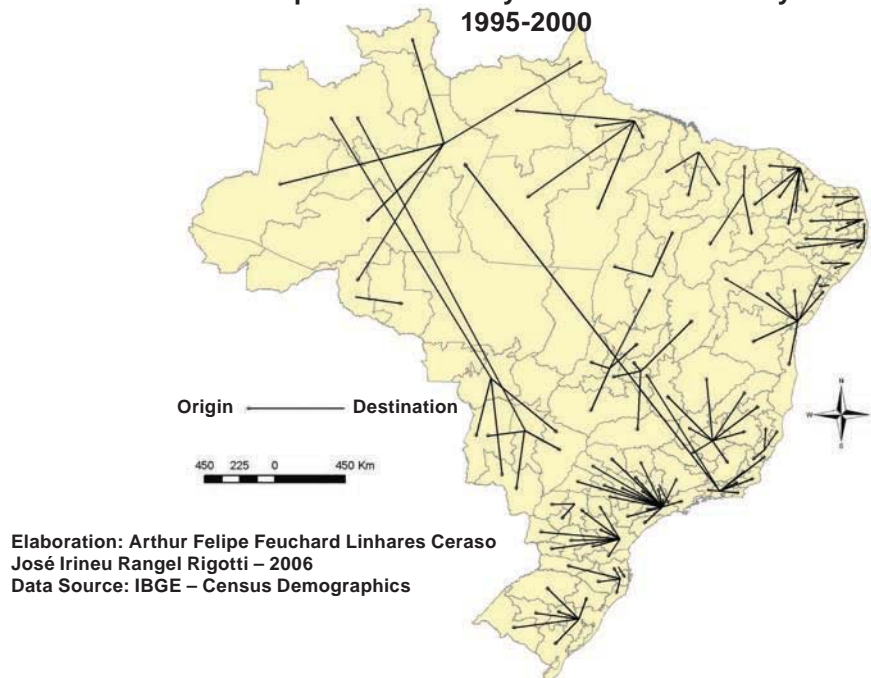


**Brazil: Principal Origins of the Migratory Flow  
Population with 15 years or more of study  
1995-2000**



**Figure 3**

**Brazil: Principal Destinations of the Migratory Flow  
Population with 15 years or more of study  
1995-2000**



**Figure 4**

However São Paulo ceased performing its role as an important place of origin for other more dynamic places in the Center-West, indicating that, at the end of the 1990s, it channeled the flow of qualified emigrants to its own state interior. Finally, attention is called to the fact that that same region of Paraíba continues sending educated emigrants to a very distant area, this time to Acre.

The other two regions not containing capitals were Western Tocantins and São José do Rio Preto. The first is a more recently occupied area, showing that it is capable of attracting qualified people, especially from the north of the state of Goiás; while the second represents a pole in the area of major dynamism of the country in terms of population flow – the interior of the state of São Paulo (Rigotti & Vasconcellos, 2005).

During the second period, without exception, the most important destinations of all the networks are regions of the metropolitan areas or of the state capitals (Figure 4). The North is the only region that does not have all of its capitals included, i.e., three of its regions are excluded. The most recently created cities receive immigrants from their neighboring areas. Primarily, Campinas maintains the characteristic of receiving qualified emigrants from the Metropolitan Region of

São Paulo, as it did in the preceding period. The Valley of Itajaí is another that receives educated population from its neighbor, the Metropolitan Region of Florianópolis. In third place, the region where the metropolitan areas of Londrina and of Maringá are found attracts immigrants from the neighborhood, in Paraná.

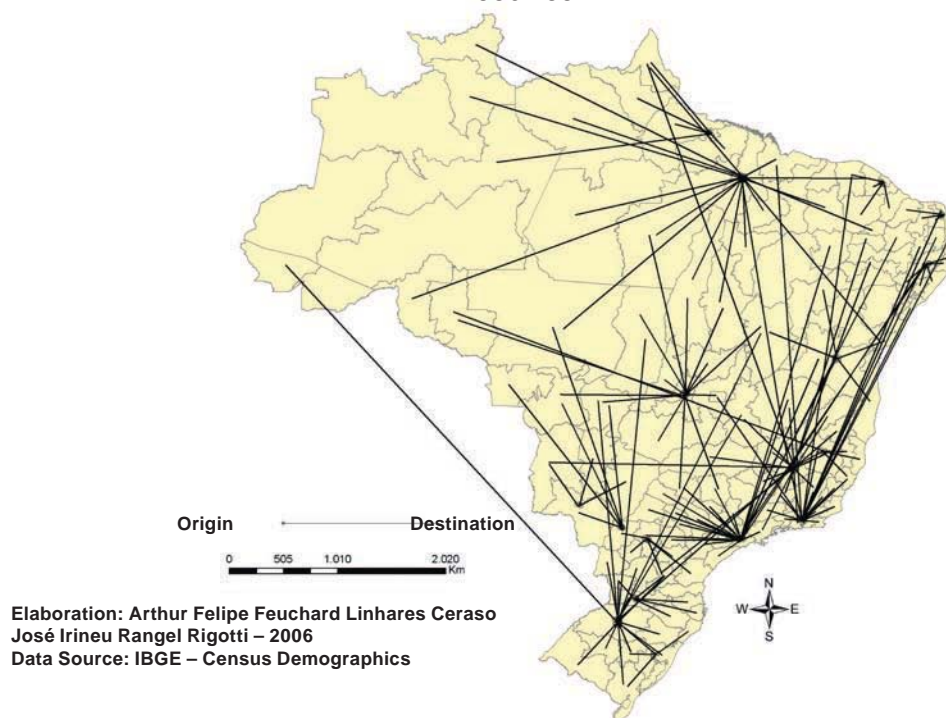
Some places overcome the detriment of distance. In the north of the country the regions of Manaus and Belém attracted people from long distances. This fact is understandable, given the great dispersion of the urban localities in this enormous area. When neighbors from the east are not absorbed by Manaus, they go to the capitals of the Center-West, Cuiabá and Campo Grande. Thus the ties between the North and the Center-West increased. When the most qualified people leave Manaus, they go to Rio de Janeiro, the only region in the Southeast that establishes a migratory network with the North. Besides this, Rio de Janeiro also maintains a direct connection with Brasília.

## **The less educated migrants' migratory networks**

### ***First Period***

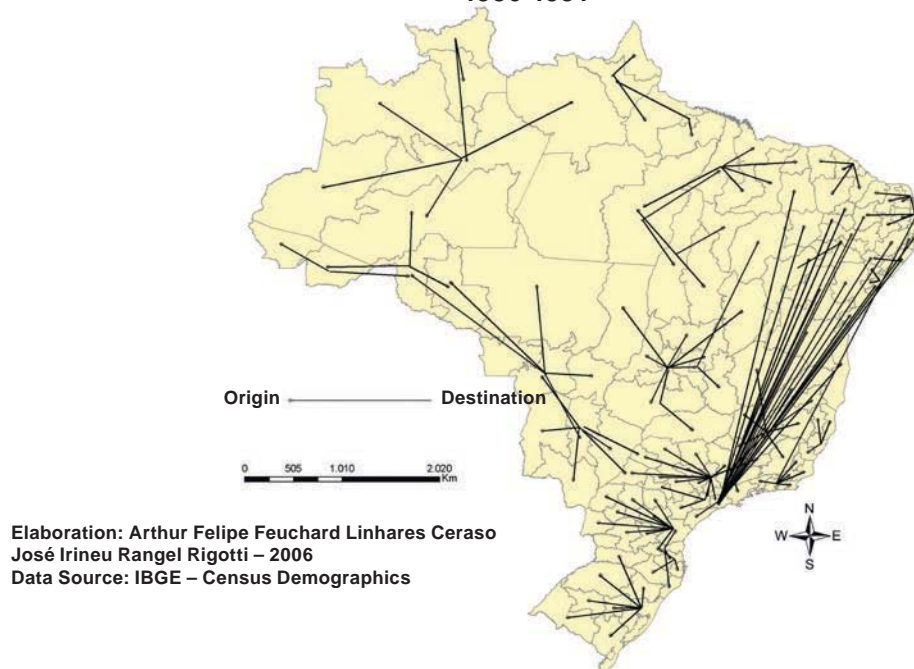
In the period 1986-1991, attention is called to the role played by various far distant regions as destinations receiving little-educated migrants from the various mesoregions of the metropolitan areas of Brazil, the most important areas of the migratory networks (Figure 5). This occurs, largely, in the Northeast Region, but also in the North. While destinations in the latter area are found from the mesoregions of Belém and Terezina, the Northeast absorbed people from the metropolitan agglomerations of São Paulo and Rio de Janeiro, besides those from the region containing the nearest capital.

**Brazil: Principal Origins of the Migratory Flow  
Population with 04 years or less of study  
1986-1991**



**Figure 5**

**Brazil: Principal Destinations of the Migratory Flow  
Population with 04 years or less of study  
1986-1991**



**Figure 6**

As a matter of fact, this is also the spatial pattern of many other important mesoregions of the country, such as those where the metropolitan areas of Goiânia, Belo Horizonte and Porto Alegre are located, which functioned as redistributers of the less qualified population to their surrounding areas, a characteristic role, therefore, of important poles in their respective states, but without being within the same great striking distance from the major national cities, São Paulo and Rio de Janeiro.

The originating areas that did not contain capitals (in the interior of the Federation Unit) are limited to the states in the South of the country, Minas Gerais, Mato Grosso do Sul and Bahia. With the exception of these last two, whose mesoregions furnish migrants for the more immediate surrounding areas, the other regions sent migrants to distant regions that have already exercised a role of agricultural-mineral frontier, principally in the Center-West, but Rondônia and Acre in the North also received migrants with low schooling level from the states of Minas and Rio Grande do Sul, respectively.

Another significant aspect from Figure 5 is the high density of the migratory movements over the national territory, i.e., the areas that play the role of destination are spread practically throughout the country, forming a complex weaving of population flow.

This pattern contrasts with that shown by Figure 6. Here the reciprocity of migratory flow of less educated people becomes clear, once the principal destinations also become the mesoregions containing capitals or metropolitan agglomerations. However, the density of the flow over the Brazilian territory is considerably lower than the pattern revealed in the chart of Figure 5, since in the great majority of instances these areas of origin of the respective migratory networks were sufficiently close to the receiving center. A noticeable exception, in this case, is the mesoregion of Metropolitan São Paulo, which absorbed the largest number of low-educated migrants from the extensive territorial strip of the Northeast.

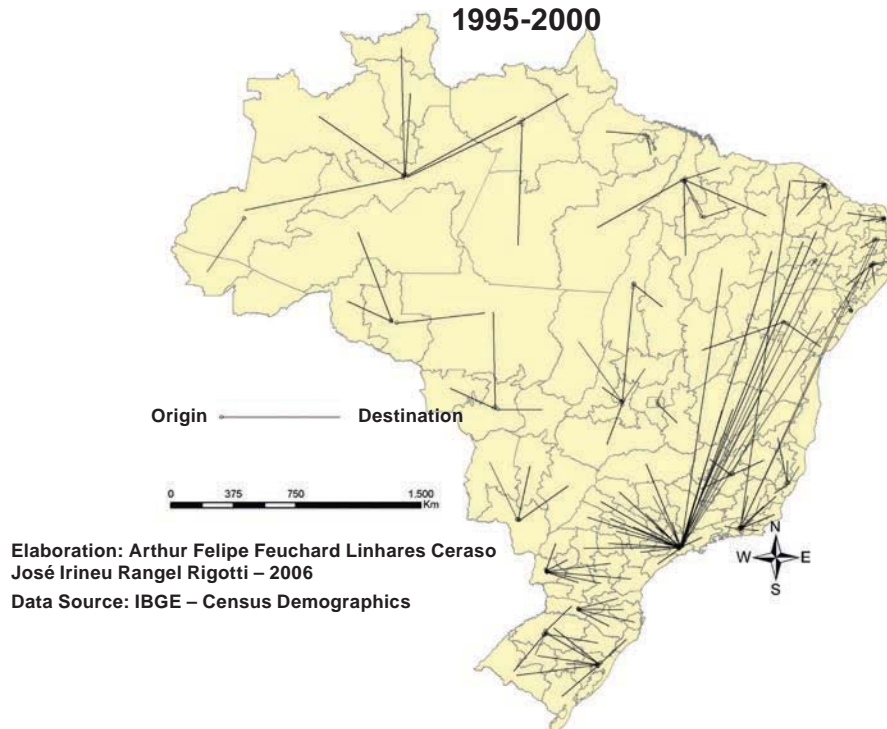
This phenomenon also occurred within São Paulo, but this time with a much smaller striking radius. The mesoregions of Campinas and Greater Paulista Metropolitan Area (neighboring the Metropolitan Region of São Paulo) were receptors of the less qualified population, but which was from the interior of the state.

### *Second Period*

In the subsequent period an important change occurred in the spatial pattern of the migratory flow of less educated people. The map in Figure 7 is visibly less dense than the corresponding Map 5, i.e., besides the part played by the migrants' originating exclusively from mesoregions containing metropolitan centers or capitals, the function the destination serves is also far more delimited by relatively few regions surrounding the areas that refuse them. Once more, the mesoregion of Metropolitan São Paulo is the most

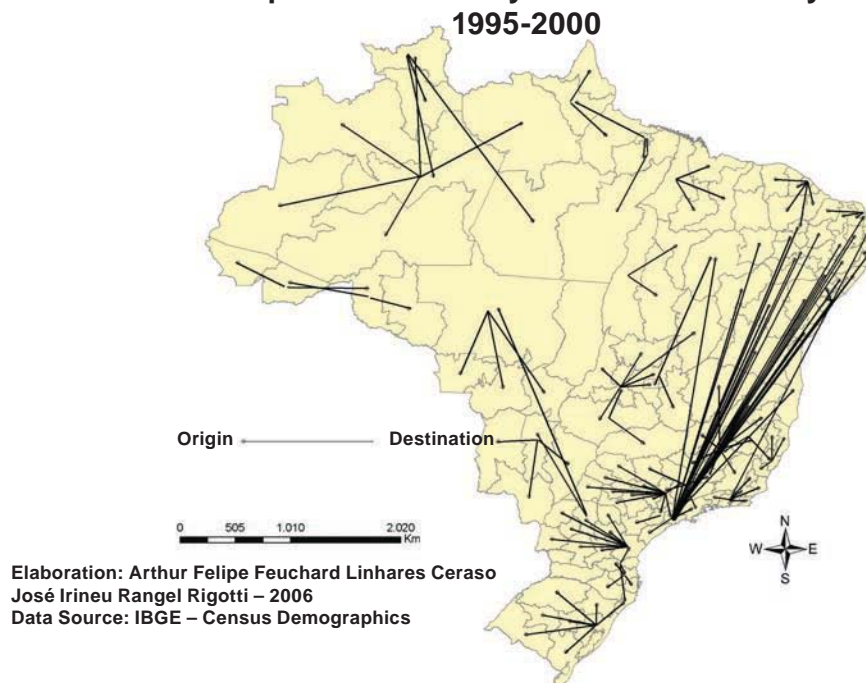


**Brazil: Principal Origins of the Migratory Flow  
Population with 04 years or less of study  
1995-2000**



**Figure 7**

**Brazil: Principal Destinations of the Migratory Flow  
Population with 04 years or less of study  
1995-2000**



**Figure 8**

prominent, since besides its less qualified emigrants being received by the interior of its own state and by the bounding areas of Minas Gerais and Paraná, the interior of the Northeast contains many receptive mesoregion. The historical relations between the northeast regions furnishing poorly-qualified manual labor and the Metropolitan Region of São Paulo are well known in Brazilian literature about migrations.<sup>3</sup> Thus, the mesoregions of the Northeast, most probably, are functioning as the areas of return for this population, a theme that, however, is beyond the scope of this work.

If between the two periods there were noticeable changes in the spatial pattern of the combinations of areas that played the role of receptors in the various identified networks, in turn, the migratory networks suffered no great changes with reference to the role of the country's places of origin. For the period 1995-2000, the chart from Figure 8 reveals a spatial distribution similar to that of the previous period (Figure 6). In fact, São Paulo's metropolitan mesoregion continues to be the principal destination for the less qualified population of the Northeast, the mesoregions of Campinas and the greater metropolitan area of São Paulo attracting migrants from the interior of its own state and many other regions that contain the most important urban centers of their respective states, spread throughout the country, are the receiving areas of the migrants from their suburbs.

### **Final Considerations**

In the two five-year periods, nearly the totality of the principal origins of the migrants with fifteen years or more of schooling contained a metropolitan region or a capital of their respective unit of the Federation. (Figures 1 and 3). The contribution of the mesoregions that contain large and complex urban accumulations of the more qualified migrants' movement is stronger and essential for understanding this type of migration. No less than 96% of all the most important origins identified are metropolitan regions or regions of capitals, in the second period, a proportion that increased in relation to the first (which was already represented by 92% of the identified mesoregions). In fact, these are the places where the presence of the universities and research centers is more concentrated and should logically be the suppliers of more qualified labor.

At the same time there was reinforcement of the role played by the large urban agglomerations which were also identified as destinations for more qualified people. One of the tendencies in recent decades was the emergence of new agglomerative economies, to a large extent propelled by new locational requirements that include, obviously, highly qualified human resources.

If the migrations of people with, as a minimum, a complete high school course, reflects the dislocation of qualified labor to exercise these new activities, the regions that house and supply these migrants are located at very specific points in the national territory.



The Metropolitan Region of São Paulo performs a double role of offering and receiving these qualified migrants, maintaining great interaction with the interior of the state and the boundary regions of neighboring states. In this sense, the mesoregion of Campinas stands out, since it always appears as an attractive area for those leaving the mesoregion of the capital. Actually, this same role is performed by some locations in the South of the country, such as the Valley of Itajaí, the destination for those leaving Florianópolis; while Londrina and Maringá attract immigrants from neighboring areas.

Rio de Janeiro exerts a very special role, once the reciprocity of the nearest flow is extrapolated, reaching very distant areas of some capitals of the North Region. The population exchanges with the Northeast were not significant in the second period, showing that, in the migratory network of more qualified people, the functions of the areas of origin and destination tended to be restricted to their own region. As it appears, the Northeast has acquired greater autonomy when one considers the flow of more educated people and/or the regions that offered it qualified workers are no longer performing the same role.

This tendency to regionalization also was observed in relation to the Center-West which, similarly to what occurred in relation to Rio de Janeiro and the Northeast, also experienced a weakening of its interaction with the mesoregion of São Paulo's metropolitan area. In this sense, the regions of the capitals of the central portion of Brazil furnish the most qualified migrants for the interior of the region, at the same time that they also receive them, however, in this case, some areas of the North of the country, complete the network of suppliers of more educated people.

The spatial pattern of the migratory flow of the population with less education, in the two periods, also showed the strong presence of the mesoregions that contain metropolitan agglomerations or capitals. This is valid as much for the regional function of the principal origins as the principal destinations. But, this time, contrary to what occurred in relation to the more educated migrants, the Metropolitan Region of São Paulo fulfilled a very important role not only as the origin for the Northeast regions, but also as the destination of people with lesser qualifications. Thus, the Metropolitan Region of São Paulo does not fulfill the function of absorbing the more capable Northeasterners, but still is the most important option for the unqualified population from the most economically depressed areas of the country.

Some other phenomena deserve attention. Campinas is a receiving center for less qualified people; but contrary to what occurs in relation to the more educated migrants, its mesoregion exerted a more extensive centripetal function, embracing people from practically all of the western part of the state. This pattern actually began to also be experienced by the South of Minas in the period 1995-2000, as it started receiving people of low education coming

from the region of Campinas itself and from the northeast of the state, besides the Metropolitan Region of São Paulo.

Finally, it is worth stressing that some of the interior regions of the South that serve as destination for more qualified people coming from the metropolitan areas of the three states, do not perform this function for those of low education; on the contrary, these areas send unqualified people to the cities in which the capitals of the South Region are found. Thus also the metropolitan accumulations of the meridional portion of Brazil are the locations that polarize the population movements with little education.

These considerations show that, many times, the migratory flows do not obey the power of attraction of the closest areas, mirroring historical phases in which migrants went to the frontier areas or then found work in the large industrial centers, mainly in São Paulo and Rio de Janeiro. Beginning at that time, strong ties were established and reciprocal movements that established the outlines of the various migratory networks.

But it seems that the end of the 1990s marked a tendency of major regionalization and fragmentation of the flows, taking into account the weakening of the field of attraction and repulsion of the mesoregions, even those with the largest urban centers of the country. This is more obvious in the case of the population flows of the most educated migrants, suggesting that the new locational requirements favor redefinition of the roles and the specialization of some regions. It is outside the scope of this work, however, to verify the importance of the migration of return, but all evidence indicates that this is an essential phenomenon for understanding the complex cycle of spatial redistribution of the Brazilian population, at least for those of low educational level.

## Notes

- 1 This article is the partial result of a project assisted by CNPq (Processo n. 476955/2004-1). Thanks to the grantor from the Scientific Initiation, Arthur Felipe Feuchard Linhares Ceraso for assistance in developing the charts.
- 2 The methodological details, as much the choice of the census questions about migration as the Factorial analytical technique employed for the delimiting of the migratory networks, can be found in Rigotti & Vasconcellos (2005). An analysis of migrations at the city level was also done in this work.
- 3 See, among others, Brito (1999), who, in addition, reflects about future trends of the migratory phenomenon involving these two regions.

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**ABSTRACT** – Productive reorganization induced new contours in the spatial redistribution of economic activities, which, in turn, influenced the spatial redistribution of the Brazilian population. This paper seeks to identify the spatial patterns of migratory flows in Brazil, attempting to relate them to the new locational requirements of deconcentrated economic and interurban activities. As such, the main migratory networks of Brazil have been delimited for both more educated and less educated populations. Evidence points to an increasing channeling of population flow, mainly in relation to the networks of more educated migrants. At the same time, those migratory movements of longer distance, that characterized the periods of occupation of the agricultural-mineral frontiers and the movements of low qualified manual laborers toward industrial regions, have experienced a noticeable diminishing process.

**KEYWORDS** – Population flows in Brazil, Population redistribution by educational level, Regionalization.

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